

# NOISE IMMUNIZED\*RECEIVERS

HQ-170A.....HQ-170A-VHF.....HQ-180A

\*When equipped with the fantastic Hammarlund Noise Immunizer. Kit, or factory installed for only \$33.75.

- A true I.F. signal gate — not an audio limiter. Offers complete immunity to signal-drowning noise by rendering the receiver inoperative during noise impulses — faster than the ear can hear.
- Manually adjustable for depth of limiting without distortion of incoming signal.
- Almost \$100.00 less than competitive brands
- Tremendously effective on SSB and CW
- Can be used with HRO-60 — and others too!

**NOW!**  
AVAILABLE FOR  
THE 75A4

There's a new world of communications awaiting you under the Hammarlund Noise Immunized blanket.

**TRY IT!**

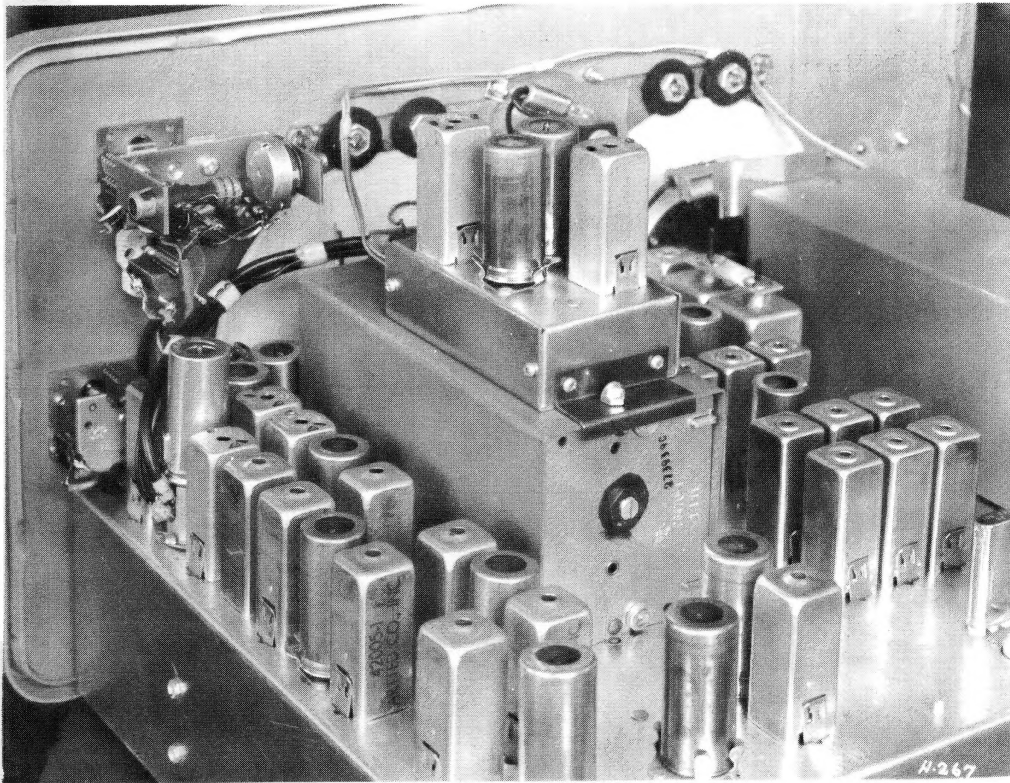


**HAMMARLUND** MANUFACTURING COMPANY

A GIANNINI SCIENTIFIC COMPANY

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NOISE IMMUNIZER INSTALLED IN A HQ-180 SERIES RECEIVER

After the I.F. Noise Immunizer has been installed in the Receiver, both the existing Noise Limiter and the new I.F. Noise Immunizer can be used independently or together. The existing noise limiter is an audio amplitude limiting device. The circuitry and operation of this limiter remains unchanged, and is controlled by the smaller knob which also operates the switch. This knob is normally adjusted to the extreme counter-clockwise position (Limiter OFF) and is turned clockwise to increase the degree of audio limiting in the presence of undesired noise.

A considerable degree of noise reduction is accomplished with this type of noise limiter. The Noise Limiter, however, cannot prevent noise peaks from overloading the previous stages.

The I.F. Noise Immunizer is introduced into the approximate middle of the communications receiver circuitry to "Immunize" (render inoperative) the receiver during the short duration of time of any individual noise pulse. The listener will not hear the

"hole" because of its short duration and very effective noise reduction is obtained. The larger of the concentric knobs controls the degree of I.F. Noise silencing of threshold. This knob is normally adjusted to its extreme counterclockwise position (Immunizer OFF) and is turned clockwise for increasing effectiveness.

When noisy reception exists, the Immunizer knob is turned clockwise up to the position where noise is suppressed. It is desirable to use the least amount of silencing to effectively suppress the undesired noise. The knob should be adjusted to suit listening conditions. The exact knob position is not critical and depends upon the relative signal strength of the signal, noise, and also the type of noise (waveform).

This type of noise immunizing is extremely effective on CW and SSB, making possible the reception of signals that could not be heard without the Immunizer due to heavy ignition or other pulse type noise.